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L5: Entry 3 of 10 File: USPT Aug 26, 2003

US-PAT-NO: 6610839
DOCUMENT-IDENTIFIER: US 6610839 B1

TITLE: Promoter for telomerase reverse transcriptase

DATE-ISSUED: August 26, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Morin; Gregg B.	Davis	CA		
Andrews; William H.	Richmond	CA		

US-CL-CURRENT: 536/24.1; 435/194, 435/320.1

CLAIMS:

What is claimed is:

1. An isolated nucleic acid comprising a promoter sequence that either: a) is contained in lambda phage G.phi.5 deposited as ATCC Accession No. 98505; or b) hybridizes to the DNA of lambda phage G.phi.5 at 5 to 25.degree. C. below the melting temperature (T.sub.m) of a double-stranded DNA having the sequence of lambda phage G.phi.5 in aqueous solution at 1 M NaCl; wherein the promoter sequence promotes transcription in cells endogenously expressing human telomerase reverse transcriptase (hTRT).

2. An isolated nucleic acid comprising a promoter sequence that is at least 80% identical to the 1.8 kilobases of SEQ. ID NO:6 that are upstream of the translation initiation site; wherein the promoter sequence promotes transcription in cells endogenously expressing human telomerase reverse transcriptase (hTRT).

3. The nucleic acid of claim 1, which hybridizes to lambda phage G.phi.5 at 5.degree. C. below T.sub.m in aqueous solution at 1 M NaCl.

4. The nucleic acid of claim 2, wherein the promoter sequence comprises at least 100 consecutive nucleotides that are at least 90% identical to a sequence contained in SEQ. ID NO:6 within 1.8 kilobases upstream of the translation initiation site.

5. The nucleic acid of claim 2, wherein the promoter sequence comprises at least 200 consecutive nucleotides that are at least 90% identical to a sequence contained in SEQ. ID NO:6 within 1.8 kilobases upstream of the translation initiation site.

6. The nucleic acid of claim 2, wherein the promoter sequence comprises the 1.8 kilobases of SEQ. ID NO:6 that are upstream of the translation initiation site.

7. The nucleic acid of claim 2, which is a DNA.

8. The nucleic acid of claim 2 contained in a viral vector.

9. The nucleic acid of claim 8, wherein the viral vector is an adenovirus vector or a retrovirus vector.

10. The nucleic acid of claim 2 contained in a host cell.

11. The nucleic acid of claim 2, in which the promoter sequence is operably linked to a heterologous sequence, such that the heterologous sequence is transcribed in cells endogenously expressing TRT.

12. The nucleic acid of claim 11, wherein the heterologous sequence is a reporter gene.

13. The nucleic acid of claim 12, wherein the reporter gene encodes a protein that is fluorescent, phosphorescent, or has enzymatic activity.

14. The nucleic acid of claim 11, wherein the heterologous sequence is a gene which, upon expression in a cell, is toxic to the cell.

15. The nudieic acid of claim 11, wherein the heterologous sequence is a gene which, upon expression in a cell, renders the cell more susceptible to toxicity of a drug.

16. The nucleic acid of claim 15, wherein the gene encodes thymidine kinase.

17. An isolated or recombinant nucleic acid comprising a promoter sequence containing the 1.8 kB of SEQ. ID NO:6 upstream of the transcription initiation site for human telomerase reverse transcriptase (hTRT), or a fragment thereof that promotes transcription in cells endogenously expressing hTRT.

18. The nucleic acid of claim 17, containing at least 100 consecutive nucleotides of SEQ. ID NO:6 within 1.8 kilobases upstream of the translation initiation site.

19. The nucleic acid of claim 17, containing at least 200 consecutive nucleotides of SEQ. ID NO:6 within 1.8 kilobases upstream of the translation initiation site.

20. The nucleic acid of claim 17, further comprising a sequence from within the first intron of SEQ. ID NO:6.

21. The nucleic acid of claim 17 contained in a viral vector.

22. The nucleic acid of claim 21, wherein the viral vector is an adenovirus vector or a retrovirus vector.

23. The nucleic acid of claim 17, in which the promoter sequence is operably linked to a heterologous sequence, such that the heterologous sequence is transcribed in cells endogenously expressing TRT.

24. The nucleic acid of claim 23, wherein the heterologous sequence is a reporter gene.

25. The nucleic acid of claim 24, wherein the reporter gene encodes a protein that is fluorescent, phosphorescent, or has enzymatic activity.

26. The nucleic acid of claim 23, wherein the heterologous sequence is a gene which, upon expression in a cell, is toxic to the cell.

27. The nucleic acid of claim 23, wherein the heterologous sequence is a gene which, upon expression in a cell, renders the cell more susceptible to toxicity of a drug.

28. The nucleic acid of claim 1 contained in a viral vector.

29. The nucleic acid of claim 28, wherein the viral vector is an adenovirus vector or a retrovirus vector.

30. The nucleic acid of claim 1, in which the promoter sequence is operably linked to a heterologous sequence, such that the heterologous sequence is transcribed in cells endogenously expressing TRT.

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L6: Entry 10 of 10 File: USPT Jul 17, 2001

US-PAT-NO: 6261836
DOCUMENT-IDENTIFIER: US 6261836 B1

TITLE: Telomerase

DATE-ISSUED: July 17, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cech; Thomas R.	Boulder	CO		
Lingner; Joachim	Epalinges			CH
Nakamura; Toru	Boulder	CO		
Chapman; Karen B.	Sausalito	CA		
Morin; Gregg B.	Palo Alto	CA		
Harley; Calvin B.	Palo Alto	CA		
Andrews; William H.	Richmond	CA		

US-CL-CURRENT: 435/325; 435/320.1, 435/7.1, 435/7.2, 514/2, 530/324, 530/350, 536/23.2, 536/23.5

CLAIMS:

We claim:

1. A synthetic or recombinant human telomerase reverse transcriptase (hTRT) protein, or a variant thereof, or a fragment thereof, wherein said variant is encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide having a sequence complementary to SEO ID NO: 224, and wherein said hTRT protein, variant, or fragment has telmerase catalytic activity when complexed with a telomerase RNA.

2. A composition comprising the hTRT protein of claim 1, and further comprising an RNA, wherein the hTRT protein and the RNA form a telomerase ribonucleic acid complex.

3. An isolated, synthetic, substantially pure, or recombinant polynucleotide comprising a nucleic acid sequence that encodes the hTRT protein, variant or fragment of claim 1, or the complement of said nucleic acid sequence.

4. The polynucleotide of claim 1, comprising a promoter sequence operably linked to the sequence encoding the hTRT protein.

5. A isolated cell comprising the recombinant polynucleotide of claim 3.

6. A cell of claim 5 that is a eukaryotic cell.

7. An isolated, synthetic, substantially pure, or recombinant polynucleotide encoding a full-length naturally occurring human telomerase reverse transcriptase (hTRT) protein, said protein having 1132 amino acid residues.

8. An isolated, synthetic, substantially pure, or recombinant polynucleotide encoding a full-length naturally occurring human telomerase reverse transcriptase

(hTRT) protein, said protein having 1132 amino acid residues, wherein said polynucleotide comprises the hTRT protein encoding sequence of bases 56 to 3451 of Seq. ID. No. 224 (FIG. 53).

9. The polynucleotide of claim 3, wherein the encoded protein has 1132 amino acid residues.

10. The polynucleotide of claim 9, wherein said polynucleotide comprises an encoding region of bases 56-3451 of SEQ ID NO: 224.

11. A method of preparing recombinant telomerase, said method comprising contacting the recombinant hTRT protein of claim 1 with a telomerase RNA component under conditions such that said recombinant protein and said telomerase RNA component associate to form a telomerase enzyme capable of catalyzing the addition of nucleotides to a telomerase substrate.

12. The method of claim 11, wherein said contacting occurs in a cell which has been engineered to express recombinant hTRT.

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L4: Entry 1 of 1 File: USPT Dec 10, 2002

US-PAT-NO: 6492171
DOCUMENT-IDENTIFIER: US 6492171 B2

TITLE: Antisense modulation of TERT expression

DATE-ISSUED: December 10, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Monia; Brett P.	La Costa	CA		
Gaarde; William A.	Carlsbad	CA		
Freier; Susan M.	San Diego	CA		
Wancewicz; Edward	Poway	CA		

US-CL-CURRENT: 435/375; 435/325, 536/24.5

CLAIMS:

What is claimed is:

1. A compound 8-50 nucleobases in length wherein the compound has a sequence comprising at least an 8-nucleobase portion of SEQ ID NO: 43, 44, 46, 47, 48, 49, 50, 52, 53, 54, 58, 59, 60, 61, 64, 65, 68, 69, 70, 76, 77, 80, 83, 85, 86, 87, 89, 90, 91, 92, 93, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 106, 107 or 108 and wherein said compound specifically hybridizes with and inhibits the expression of TERT.

2. The compound of claim 1 which is an antisense oligonucleotide.

3. The compound of claim 2 wherein the antisense oligonucleotide comprises at least one modified internucleoside linkage.

4. The compound of claim 3 wherein the modified internucleoside linkage is a phosphorothioate linkage.

5. The compound of claim 2 wherein the antisense oligonucleotide comprises at least one modified sugar moiety.

6. The compound of claim 5 wherein the modified sugar moiety is a 2'-O-methoxyethyl sugar moiety.

7. The compound of claim 2 wherein the antisense oligonucleotide comprises at least one modified nucleobase.

8. The compound of claim 7 wherein the modified nucleobase is a 5-methylcytosine.

9. The compound of claim 2 wherein the antisense oligonucleotide is a chimeric oligonucleotide.

10. A composition comprising the compound of claim 1 and a pharmaceutically acceptable carrier or diluent.

11. The composition of claim 10 further comprising a colloidal dispersion system.

12. The composition of claim 10 wherein the compound is an antisense oligonucleotide.

13. A method of inhibiting the expression of TERT in cells or tissues comprising contacting said cells or tissues in vitro with the compound of claim 1 so that expression of TERT is inhibited.

14. A method of modulating apoptosis in a cell comprising contacting said cell in vitro with the compound of claim 1, whereby apoptosis is modulated.

15. A method of inhibiting cell growth comprising contacting a cell in vitro with the compound of claim 1, whereby the growth of the cell is inhibited.

16. The method of claim 15 wherein said cells are cancer cells.

17. A compound which has a sequence consisting of SEQ ID NO: 57, 66, 67 or 71.

18. The compound of claim 17 which is an antisense oligonucleotide.

19. The compound of claims 18 wherein the antisense oligonucleotide comprises at least one modified internucleoside linkage.

20. The compound of claim 19 wherein the modified internucleoside linkage is a phosphorothioate linkage.

21. The compound of claim 18 wherein the antisense oligonucleotide comprises at least one modified sugar moiety.

22. The compound of claim 21 wherein the modified sugar moiety is a 2'-O-methoxyethyl sugar moiety.

23. The compound of claim 18 wherein the antisense oligonucleotide comprises at least one modified nucleobase.

24. The compound of claim 23 wherein the modified nucleobase is a 5-methylcytosine.

25. The compound of claim 18 wherein the antisense oligonucleotide is a chimeric oligonucleotide.

26. A composition comprising the compound of claim 17 and a pharmaceutically acceptable carrier or diluent.

27. The composition of claim 26 further comprising a colloidal suspension system.

28. The composition of claim 26 wherein the compound is an antisense oligonucleotide.

29. A method of inhibiting the expression of TERT in cells or tissues comprising contacting said cells or tissues in vitro with the compound of claim 17 so that expression of TERT is inhibited.

30. A method of modulating apoptosis in a cell comprising contacting said cell in vitro with the compound of claim 17 whereby apoptosis is modulated.

31. A method of inhibiting cell growth comprising contacting cells in vitro with the compound of claim 17 whereby the growth of cells is inhibited.

32. The method of claim 17 wherein said cells are cancer cells.

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L3: Entry 1 of 3 File: USPT Sep 30, 2003

US-PAT-NO: 6627619
DOCUMENT-IDENTIFIER: US 6627619 B2

TITLE: Antisense compositions for detecting and inhibiting telomerase reverse transcriptase

DATE-ISSUED: September 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cech; Thomas R.	Boulder	CO		
Lingner; Joachim	Epalinges			CH
Nakamura; Toru	Boulder	CO		
Chapman; Karen B.	Sausalito	CA		
Morin; Gregg B.	Palo Alto	CA		
Harley; Calvin B.	Palo Alto	CA		
Andrews; William H.	Richmond	CA		

US-CL-CURRENT: 514/44; 435/193, 435/194, 435/6, 536/23.2, 536/23.5, 536/24.5

CLAIMS:

What is claimed is:

1. A method for inhibiting expression of human telomerase reverse transcriptase (hTRT) protein in a cell, comprising contacting the cell with an antisense oligonucleotide that hybridizes to a target DNA having the nucleotide sequence of SEQ ID NO:1 at 5.degree. C. to 25.degree. C. below T.sub.m in aqueous solution at 1 M NaCl; wherein T.sub.m is the melting temperature of a complementary oligonucleotide hybridized to the target DNA in aqueous solution at 1 M NaCl, wherein the complementary oligonucleotide is exactly complementary to SEQ ID NO:1 and the same length as the antisense oligonucleotide; and wherein hybridization of the antisense oligonucleotide to an mRNA encoding hTRT (SEQ ID NO:1) inhibits expression of the mRNA.

2. The method of claim 1, wherein the antisense oligonucleotide hybridizes to the target DNA at 5.degree. C. below T.sub.m.

3. The method of claim 1, wherein the antis ease oligonucleotide is from 10 to 50 nucleotides in length.

4. The method of claim 1, wherein the antisense oligonucleotide is from 20 to 100 nucleotides in length.

5. The method of clam 1, wherein the antisense oligonucleotide comprises at least 20 nucleotides exactly complementary to SEQ ID NO:1.

6. The method of claim 1, wherein the antisense oligonucleotide comprises at least 30 nucleotides exactly complementary to SEQ ID NO:1.

7. The method of claim 1, wherein the antisense oligonucleotide is DNA.

8. The method of claim 1, wherein the antisense oligonucleotide is RNA.

9. The method of claim 1, wherein the antisense oligonucleotide contains one or more synthetic nucleotides.

10. The method of claim 1, wherein the antisense oligonucleotide contains one or more phosphorothioate oligonucleotides.

11. The method of claim 1, wherein the antisense oligonucleotide contains one or more phosphoramidate oligonucleotides.

12. The method of claim 1, wherein the antisense oligonucleotide is a ribozyme.

13. The method of claim 1, wherein the antisense oligonucleotide contains a sequence selected from SEQ ID NOs:4-72.

14. The method of claim 1, whereby expression of hTRT protein in the cell is reduced by at least 50%.

15. The method of claim 1, wherein the antisense nucleotide hybridizes to a target DNA consisting of the first 945 bp of SEQ. ID NO:1; and whereby expression of hTRT protein in the cell is reduced by at least 75%.

16. The method of claim 1, wherein the antisense nucleotide hybridizes to a target DNA consisting of the first 945 bp of SEQ. ID NO:1; and whereby expression of hTRT protein in the cell is reduced by at least 90%.

17. A method for inhibiting expression of human telomerase reverse transcriptase protein in a cell, comprising contacting the cell with a nucleic acid that contains at least 10 consecutive nucleotides exactly complementary to SEQ ID NO:1; wherein hybridization of the nucleic acid to an mRNA encoding hTRT (SEQ ID NO:1) inhibits expression of the mRNA.

18. The method of claim 17, wherein the nucleic acid is from 20 to 100 nucleotides in length.

19. The method of claim 17, wherein the nucleic acid contains one or more synthetic nucleotides.

20. The method of claim 17, whereby expression of hTRT protein is reduced by at least 50%.

21. The method of claim 17, wherein the 10 consecutive nucleotides are exactly complementary to a sequence contained within the first 945 bp of SEQ. ID NO:1; and whereby expression of hTRT protein is reduced by at least 90%.

22. A method for inhibiting expression of human telomerase reverse transcriptase protein in a cell, comprising contacting the cell with a nucleic acid that contains at least 20 consecutive nucleotides exactly complementary to SEQ. ID NO:1; wherein hybridization of the nucleic acid to an mRNA encoding hTRT (SEQ. ID NO:1) inhibits expression of the mRNA.

23. The method of claim 22, wherein the nucleic acid is from 20 to 100 nucleotides in length.

24. The method of claim 22, wherein the nucleic acid contains one or more synthetic nucleotides.

25. The method of claim 22, whereby expression of hTRT protein is reduced by at least 50%.

26. The method of claim 22, wherein the 20 consecutive nucleotides are exactly complementary to a sequence contained within the first 945 bp of SEQ. ID NO:1; and whereby expression of hTRT protein is reduced by at least 90%.

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L2: Entry 1 of 2 File: USPT Sep 30, 2003

US-PAT-NO: 6627619
DOCUMENT-IDENTIFIER: US 6627619 B2

TITLE: Antisense compositions for detecting and inhibiting telomerase reverse transcriptase

DATE-ISSUED: September 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cech; Thomas R.	Boulder	CO		
Lingner; Joachim	Epalinges			CH
Nakamura; Toru	Boulder	CO		
Chapman; Karen B.	Sausalito	CA		
Morin; Gregg B.	Palo Alto	CA		
Harley; Calvin B.	Palo Alto	CA		
Andrews; William H.	Richmond	CA		

US-CL-CURRENT: 514/44; 435/193, 435/194, 435/6, 536/23.2, 536/23.5, 536/24.5

CLAIMS:

What is claimed is:

1. A method for inhibiting expression of human telomerase reverse transcriptase (hTRT) protein in a cell, comprising contacting the cell with an antisense oligonucleotide that hybridizes to a target DNA having the nucleotide sequence of SEQ ID NO:1 at 5.degree. C. to 25.degree. C. below T.sub.m in aqueous solution at 1 M NaCl; wherein T.sub.m is the melting temperature of a complementary oligonucleotide hybridized to the target DNA in aqueous solution at 1 M NaCl, wherein the complementary oligonucleotide is exactly complementary to SEQ ID NO:1 and the same length as the antisense oligonucleotide; and wherein hybridization of the antisense oligonucleotide to an mRNA encoding hTRT (SEQ ID NO:1) inhibits expression of the mRNA.

2. The method of claim 1, wherein the antisense oligonucleotide hybridizes to the target DNA at 5.degree. C. below T.sub.m.

3. The method of claim 1, wherein the antis ease oligonucleotide is from 10 to 50 nucleotides in length.

4. The method of claim 1, wherein the antisense oligonucleotide is from 20 to 100 nucleotides in length.

5. The method of clam 1, wherein the antisense oligonucleotide comprises at least 20 nucleotides exactly complementary to SEQ ID NO:1.

6. The method of claim 1, wherein the antisense oligonucleotide comprises at least 30 nucleotides exactly complementary to SEQ ID NO:1.

7. The method of claim 1, wherein the antisense oligonucleotide is DNA.

8. The method of claim 1, wherein the antisense oligonucleotide is RNA.

9. The method of claim 1, wherein the antisense oligonucleotide contains one or more synthetic nucleotides.

10. The method of claim 1, wherein the antisense oligonucleotide contains one or more phosphorothioate oligonucleotides.

11. The method of claim 1, wherein the antisense oligonucleotide contains one or more phosphoramidate oligonucleotides.

12. The method of claim 1, wherein the antisense oligonucleotide is a ribozyme.

13. The method of claim 1, wherein the antisense oligonucleotide contains a sequence selected from SEQ ID NOs:4-72.

14. The method of claim 1, whereby expression of hTRT protein in the cell is reduced by at least 50%.

15. The method of claim 1, wherein the antisense nucleotide hybridizes to a target DNA consisting of the first 945 bp of SEQ. ID NO:1; and whereby expression of hTRT protein in the cell is reduced by at least 75%.

16. The method of claim 1, wherein the antisense nucleotide hybridizes to a target DNA consisting of the first 945 bp of SEQ. ID NO:1; and whereby expression of hTRT protein in the cell is reduced by at least 90%.

17. A method for inhibiting expression of human telomerase reverse transcriptase protein in a cell, comprising contacting the cell with a nucleic acid that contains at least 10 consecutive nucleotides exactly complementary to SEQ ID NO:1; wherein hybridization of the nucleic acid to an mRNA encoding hTRT (SEQ ID NO:1) inhibits expression of the mRNA.

18. The method of claim 17, wherein the nucleic acid is from 20 to 100 nucleotides in length.

19. The method of claim 17, wherein the nucleic acid contains one or more synthetic nucleotides.

20. The method of claim 17, whereby expression of hTRT protein is reduced by at least 50%.

21. The method of claim 17, wherein the 10 consecutive nucleotides are exactly complementary to a sequence contained within the first 945 bp of SEQ. ID NO:1; and whereby expression of hTRT protein is reduced by at least 90%.

22. A method for inhibiting expression of human telomerase reverse transcriptase protein in a cell, comprising contacting the cell with a nucleic acid that contains at least 20 consecutive nucleotides exactly complementary to SEQ. ID NO:1; wherein hybridization of the nucleic acid to an mRNA encoding hTRT (SEQ. ID NO:1) inhibits expression of the mRNA.

23. The method of claim 22, wherein the nucleic acid is from 20 to 100 nucleotides in length.

24. The method of claim 22, wherein the nucleic acid contains one or more synthetic nucleotides.

25. The method of claim 22, whereby expression of hTRT protein is reduced by at least 50%.

26. The method of claim 22, wherein the 20 consecutive nucleotides are exactly complementary to a sequence contained within the first 945 bp of SEQ. ID NO:1; and whereby expression of hTRT protein is reduced by at least 90%.

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L2: Entry 2 of 2 File: USPT Sep 3, 2002

US-PAT-NO: 6444650
DOCUMENT-IDENTIFIER: US 6444650 B1

TITLE: Antisense compositions for detecting and inhibiting telomerase reverse transcriptase

DATE-ISSUED: September 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cech; Thomas R.	Boulder	CO		
Lingner; Joachim	Epalinges			CH
Nakamura; Toru	Boulder	CO		
Chapman; Karen B.	Sausalito	CA		
Morin; Gregg B.	Palo Alto	CA		
Harley; Calvin B.	Palo Alto	CA		
Andrews; William H.	Richmond	CA		

US-CL-CURRENT: 514/44; 536/23.2, 536/23.5

CLAIMS:

What is claimed is:

1. An isolated antisense oligonucleotide that hybridizes to a target DNA having the nucleotide sequence of SEQ. ID NO:1 at 5.degree. C. to 25.degree. C. below T.sub.m in aqueous solution at 1 M NaCl; wherein T.sub.m is the melting temperature of a complementary oligonucleotide hybridized to the target DNA in aqueous solution at 1 M NaCl, wherein the complementary oligonucleotide is exactly complementary to SEQ. ID NO:1 and the same length as the antisense oligonucleotide; and wherein hybridization of the antisense oligonucleotide to an mRNA encoding hTRT (SEQ. ID NO:1.)inhibits expression of the mRNA.

2. The oligonucleotide of claim 1 that hybridizes to the target DNA at 5.degree. C. below T.sub.m.

3. The oligonucleotide of claim 1 that is DNA.

4. The oligonucleotide of claim 1 that is RNA.

5. The oligonucleotide of claim 1 that comprises one or more synthetic nucleotides.

6. The oligonucleotide of claim 5 that comprises a phosphorothioate oligonucleotide.

7. The oligonucleotide of claim 1 that is from 20 to 100 nucleotides in length.

8. The oligonucleotide of claim 7 that is 30 nucleotides in length.

9. The oligonucleotide of claim 1 that is from 10 to 50 nucleotides in length.

10. The oligonucleotide of claim 1 that comprises a sequence of about 7 to about 100 nucleotides that is exactly complementary to SEQ. ID NO:1.

11. The oligonucleotide of claim 10 that is from 20 to 100 nucleotides in length.

12. The oligonucleotide of claim 11, wherein the oligonucleotide comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS:4-72.

13. The oligonucleotide of claim 12, that is 30 nucleotides in length.

14. The oligonucleotide of claim 1, wherein said oligonucleotide reduces telomerase activity in a cell by at least 50%.

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L1: Entry 1 of 1 File: USPT Jan 8, 2002

US-PAT-NO: 6337200
DOCUMENT-IDENTIFIER: US 6337200 B1

TITLE: Human telomerase catalytic subunit variants

DATE-ISSUED: January 8, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Morin; Gregg B.	Palo Alto	CA		

US-CL-CURRENT: 435/194; 435/320.1, 435/325, 435/440, 435/455, 435/69.1, 435/70.1, 514/44, 530/350, 536/23.1, 536/23.5

CLAIMS:

What is claimed is:

1. A polynucleotide encoding a variant of human telomerase reverse transcriptase (hTRT), said variant having processive catalytic activity and comprising a deletion of at least 10 amino acids from region 192-323 or 415-450 of SEQ. ID NO:2.

2. The polynucleotide of claim 1, wherein the variant comprises a deletion of at least 25 amino acids from region 192-323 or 415-450 of SEQ. ID NO:2.

3. The polynucleotide of claim 1, further comprising a promoter sequence operably linked to the nucleotide sequence encoding the hTRT variant.

4. The polynucleotide of claim 1 that has a deletion of at least one region encoding exactly amino acids 192-323, 200-323, 200-271, 222-240, or 415-450 of SEQ. ID NO:2.

5. The polynucleotide of claim 1 that does not comprise a deletion in the region encoding amino acids 415-450.

6. The polynucleotide of claim 5, further comprising a promoter sequence operably linked to the nucleotide sequence encoding the hTRT variant.

7. A method for increasing the proliferative capacity of a human cell in vitro, comprising expressing the polynucleotide of claim 6 in the cell, thereby increasing its proliferative capacity.

8. A method for increasing the proliferative capacity of a human cell in vitro, comprising expressing the polynucleotide of claim 3 in the cell, thereby increasing its proliferative capacity.

9. A method for producing a variant telomerase reverse transcriptase, comprising expressing the polynucleotide of claim 1 in a host cell or in a cell-free expression system.

10. A cell comprising the polynucleotide of claim 1.

11. The cell of claim 10, that is a human cell.

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L8: Entry 1 of 1 File: PGPB Dec 12, 2002

PGPUB-DOCUMENT-NUMBER: 20020187471
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020187471 A1

TITLE: Novel telomerase

PUBLICATION-DATE: December 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Cech, Thomas R.	Boulder	CO	US	
Lingner, Joachim	Epalinges	CO	CH	
Nakamura, Toru	Boulder	CA	US	
Chapman, Karen B.	Sausalito	CA	US	
Morin, Gregg B.	Palo Alto	CA	US	
Harley, Calvin	Palo Alto	CA	US	
Andrews, William H.	Richmond		US	

US-CL-CURRENT: 435/6; 435/183, 435/254.2, 435/320.1, 435/69.1, 536/23.2

CLAIMS:

We claim:

1. A substantially purified peptide comprising the amino acid sequence selected from the group consisting of SEQ ID NOS: 71, 73, 75, 77, 79, 82, 83, 83, 85, 86, and 101.

2. A purified, isolated polynucleotide sequence encoding the polypeptide of claim 1.

3. The polynucleotide sequence of claim 2, wherein said polynucleotide hybridizes specifically to telomerase sequences, wherein said telomerase sequences are selected from the group consisting of human, Euplotes aediculatus, Oxytricha, Schizosaccharomyces, and Saccharomyces telomerase sequences.

4. The polynucleotide sequence of claim 3, comprising the complement of a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 70, 72, 74, 76, 78, 80, 81, and 100, and variants thereof.

5. A polynucleotide sequence that hybridizes under stringent conditions to a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 66, 69, 80, and 81.

6. The polynucleotide sequence of claim 5, wherein said polynucleotide sequence is selected from the group consisting of SEQ ID NOS: 70, 72, 74, 76, 78, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 102, 103, 104, 105, 106, 107, 108, 109, and 110.

7. The polynucleotide sequence of claim 6, wherein said nucleotide sequence comprises a purified, synthetic nucleotide sequence having a length of about ten to fifty nucleotides.

8. A method for detecting the presence of polynucleotide sequences encoding at least a portion of human telomerase in a biological sample, comprising the steps of: a) providing: i) a biological sample suspected of containing nucleic acid corresponding

to the polynucleotide sequence of SEQ ID NO: 100; ii) the nucleotide sequence of SEQ ID NO: 100, or a fragment thereof; b) combining said biological sample with said nucleotide under conditions such that a hybridization complex is formed between said nucleic acid and said nucleotide; and c) detecting said hybridization complex.

9. The method of claim 8, wherein, said nucleic acid corresponding to the nucleotide sequence of SEQ ID NO: 100 is ribonucleic acid.

10. The method of claim 9, wherein said detected hybridization complex correlates with expression of the polynucleotide of SEQ ID NO: 100 in said biological sample.

11. The method of claim 8, wherein, said nucleic acid corresponding to the nucleotide sequence of SEQ ID NO: 100 is deoxyribonucleic acid.

12. The method of claim 11, wherein said detecting of said hybridization complex comprises conditions that permit the detection of alterations in the nucleotide of SEQ ID NO: 100 in said biological sample.

13. An antisense molecule comprising the nucleic acid sequence complementary to at least a portion of the nucleotide of SEQ ID NO: 100.

14. A pharmaceutical composition comprising the antisense molecule of claim 13, and a pharmaceutically acceptable excipient.

15. The polynucleotide sequence of claim 4, wherein said nucleotide sequence is contained on a recombinant expression vector.

16. The polynucleotide sequence of claim 15, wherein said expression vector containing said nucleotide sequence is contained within a host cell.

17. A method for producing a polypeptide comprising the amino acid sequence of SEQ ID NO: 101, the method comprising the steps of: a) culturing the host cell of claim 16, under conditions suitable for the expression of the polypeptide; and b) recovering the polypeptide from the host cell culture.

18. A purified antibody which binds specifically to a polypeptide comprising at least a portion of the amino acid sequence of SEQ ID NO: 101.

19. A pharmaceutical composition comprising the antibody of claim 18 and a pharmaceutically acceptable excipient.

20. A method for detecting the expression of human telomerase in a biological sample comprising the steps of: a) providing: i) a biological sample suspected of expressing human telomerase protein; and ii) the antibody of claim 18; b) combining said biological sample and said antibody under conditions such that an antibody:protein complex is formed; and c) detecting said complex wherein the presence of said complex correlates with the expression of said protein in said biological sample.

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L7: Entry 1 of 1 File: PGPB Sep 26, 2002

PGPUB-DOCUMENT-NUMBER: 20020137703
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020137703 A1

TITLE: Protection-of-telomere-1 (POT-1) protein and encoding polynucleotides

PUBLICATION-DATE: September 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Baumann, Peter	Boulder	CO	US	
Cech, Thomas R.	Potomac	MD	US	

US-CL-CURRENT: 514/44; 435/199, 435/325, 435/69.1, 536/23.2

CLAIMS:

What is claimed is:

1. An isolated protein comprising the sequence set forth in SEQ ID NO:13, SEQ ID NO:15, or SEQ ID NO:17.

2. A protein comprising a variant of the protein having the sequence set forth in SEQ ID NO:13, SEQ ID NO:15, or SEQ ID NO:17, wherein the variant i) has at least 85% sequence identity to the protein of SEQ ID NO:13, SEQ ID NO:15, or SEQ ID NO:17, or ii) differs from SEQ ID NO:13, SEQ ID NO:15, or SEQ ID NO:17 by no more than about 20 single amino acid substitutions, deletions or insertions, and wherein the variant is capable of binding single-stranded telomeric DNA.

3. An isolated, naturally occurring, variant of a protein having the sequence set forth in SEQ ID NO:13.

4. The variant of claim 3, wherein the variant is a splicing variant.

5. A fragment of a human Pot1p, wherein the fragment is capable of binding single-stranded telomeric DNA, and wherein the fragment comprises the polypeptide having the sequence set forth in SEQ ID NO:5.

6. An isolated protein comprising the sequence set forth in SEQ ID NO:9, or SEQ ID NO:11.

7. A protein comprising a variant of the protein having the sequence set forth in SEQ ID NO:9 or SEQ ID NO:11, wherein the variant i) has at least 85% sequence identity to the protein of SEQ ID NO:9 or SEQ ID NO:11, or ii) differs from SEQ ID NO:9 or SEQ ID NO:11 by no more than about 20 single amino acid substitutions, deletions or insertions, and wherein the variant is capable of binding single-stranded telomeric DNA.

8. An isolated, naturally occurring, variant of a protein having the sequence set forth in SEQ ID NO:9.

9. The variant of claim 8, wherein the variant is a splicing variant.

10. A fragment of a SpPot1p, wherein the fragment is capable of binding single-stranded telomeric DNA, and wherein the fragment comprises the polypeptide having the sequence set forth in SEQ ID NO:6.

11. The protein fragment of claim 10, wherein the fragment is an N-terminal fragment with an apparent molecular weight of 22 kDa.

12. An isolated non-genomic polynucleotide encoding a protein that comprises a sequence set forth in SEQ ID NO:13, SEQ ID NO:15, or SEQ ID NO:17.

13. A non-genomic polynucleotide encoding a protein that comprises a variant of the protein having the sequence set forth in SEQ ID NO:13, SEQ ID NO:15, or SEQ ID NO:17, wherein the variant i) has at least 85% sequence identity to the protein of SEQ ID NO:13, SEQ ID NO:15, or SEQ ID NO:17, or ii) differs from SEQ ID NO:13, SEQ ID NO:15, or SEQ ID NO:17 by no more than about 20 single amino acid substitutions, deletions or insertions, and wherein the variant is capable of binding single-stranded telomeric DNA.

14. An isolated non-genomic polynucleotide encoding a protein that comprises the sequence set forth in SEQ ID NO:9, or SEQ ID NO:11.

15. A non-genomic polynucleotide encoding a protein that comprises variant of the protein having the sequence set forth in SEQ ID NO:9 or SEQ ID NO:11, wherein the variant i) has at least 85% sequence identity to the protein of SEQ ID NO:9 or SEQ ID NO:11, or ii) differs from SEQ ID NO:9 or SEQ ID NO:11 by no more than about 20 single amino acid substitutions, deletions or insertions, and wherein the variant is capable of binding single-stranded telomeric DNA.

16. An isolated polynucleotide encoding a naturally occurring variant of a protein having the sequence set forth in SEQ ID NO:9 or SEQ ID NO:13.

17. The polynucleotide of claim 16, wherein the encoded variant is a splicing variant.

18. An isolated polynucleotide encoding a fragment of Pot1p, wherein the fragment is capable of binding single-stranded telomeric DNA, and wherein the fragment comprises the polypeptide having the sequence set forth in SEQ ID NO:5 or SEQ ID NO:6.

19. An antibody, or a fragment or variant thereof, that is capable of binding a Pot1 protein.

20. A method of making the antibody to a Pot1p, comprising isolating the antibody from an animal or isolating an antibody-producing cell from an animal, following administration of a Pot1 protein, or an antigenic fragment thereof, to the animal.

21. An antibody made the method of claim 20.

22. A method of increasing the life-span of a cell, comprising inserting a vector comprising a POT1 polynucleotide into the cell, wherein the POT1 polynucleotide is operably linked to a promoter that allows the polynucleotide to be transcribed.

23. The method of claim 22, wherein the vector comprising a POT1 polynucleotide is administered to an individual in a pharmaceutical composition, comprising the polynucleotide and a pharmacologically acceptable excipient, diluent, or carrier.

24. The method of claim of claim 23, wherein the pharmaceutical composition comprises a carrier.

25. The method of claim of claim 24, wherein the carrier is capable of preferentially delivering the polynucleotide to a specific cell population.

26. The method of claim 25, wherein the vector comprising the POT1 polynucleotide is inserted into the cell in vitro.

27. The method of claim 26, wherein the cell is subsequently administered to an individual.

28. The method of claim 22, wherein the cell is capable of expressing a second polynucleotide that encodes an exogenous protein.

29. A method of identifying a compound that interferes with the binding of a Pot1 polypeptide to single-stranded telomeric DNA, comprising determining whether the candidate compound decreases the binding of the Pot1 polypeptide to a single-stranded telomeric DNA molecule in a mixture comprising the single-stranded telomeric DNA molecule, the polypeptide, and the candidate compound.

30. A pharmaceutical composition comprising a compound identified by the method of claim 29.

31. A method of decreasing the life-span of a cell, comprising reducing the level of Pot1p activity in a cell.

32. The method of claim 31, wherein the cell is an immortal cell line.

33. The method of claim 31, wherein the cell is a cancer cell.

34. The method of claim 31, comprising administration to an individual of a pharmaceutical composition comprising a compound that interferes with the binding of a Pot1 polypeptide to single-stranded telomeric DNA.

35. A method of detecting or measuring the presence of a Pot1 polypeptide, comprising contacting the antibody of claim 19 with a biological sample from an individual.

36. A method of detecting or measuring the presence of a POT1 polynucleotide, comprising contacting the POT1 polynucleotide, or its complement, with a biological sample from an individual.

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L5: Entry 1 of 1 File: PGPB Nov 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020164786
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020164786 A1

TITLE: Novel telomerase

PUBLICATION-DATE: November 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Cech, Thomas R.	Boulder	CO	US	
Lingner, Joachim	Epalinges	CO	CH	
Nakamura, Toru	Boulder	CA	US	
Chapman, Karen B.	Sausalito	CA	US	
Morin, Gregg B.	Palo Alto	CA	US	
Harley, Calvin B.	Palo Alto	CA	US	
Andrews, William H.	Richmond		US	

US-CL-CURRENT: 435/325; 435/199, 435/6, 435/69.1

CLAIMS:

We claim:

1. A substantially purified peptide comprising the amino acid sequence selected from the group consisting of SEQ ID NOS:71, 73, 75, 77, 79, 82, 83, 83, 85, 86, and 101.

2. A purified, isolated polynucleotide sequence encoding the polypeptide of claim 1.

3. The polynucleotide sequence of claim 2, wherein said polynucleotide hybridizes specifically to telomerase sequences, wherein said telomerase sequences are selected from the group consisting of human, Euplotes aediculatus, Oxytricha, Schizosaccharomyces, and Saccharomyces telomerase sequences

4. The polynucleotide sequence of claim 3, comprising the complement of a nucleic acid sequence selected from the group consisting of SEQ ID NOS:70, 72, 74, 76, 78, 80, 81, and 100, and variants thereof.

5. A polynucleotide sequence that hybridizes under stringent conditions to a nucleic acid sequence selected from the group consisting of SEQ ID NOS:66, 69, 80, and 81.

6. The polynucleotide sequence of claim 5, wherein said polynucleotide sequence is selected from the group consisting of SEQ ID NOS:70, 72, 74, 76, 78, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 102, 103, 104, 105, 106, 107, 108, 109, and 110.

7. The polynucleotide sequence of claim 6, wherein said nucleotide sequence comprises a purified, synthetic nucleotide sequence having a length of about ten to fifty nucleotides.

8. A method for detecting the presence of polynucleotide sequences encoding at least a portion of human telomerase in a biological sample, comprising the steps of: a) providing: i) a biological sample suspected of containing nucleic acid corresponding

to the polynucleotide sequence of SEQ ID NO:100; ii) the nucleotide sequence of SEQ ID NO:100, or a fragment thereof; b) combining said biological sample with said nucleotide under conditions such that a hybridization complex is formed between said nucleic acid and said nucleotide; and c) detecting said hybridization complex.

9. The method of claim 8, wherein, said nucleic acid corresponding to the nucleotide sequence of SEQ ID NO:100 is ribonucleic acid.

10. The method of claim 9, wherein said detected hybridization complex correlates with expression of the polynucleotide of SEQ ID NO: 100 in said biological sample.

11. The method of claim 8, wherein, said nucleic acid corresponding to the nucleotide sequence of SEQ ID NO:100 is deoxyribonucleic acid.

12. The method of claim 11, wherein said detecting of said hybridization complex comprises conditions that permit the detection of alterations in the nucleotide of SEQ ID NO:100 in said biological sample.

13. An antisense molecule comprising the nucleic acid sequence complementary to at least a portion of the nucleotide of SEQ ID NO: 100.

14. A pharmaceutical composition comprising the antisense molecule of claim 13, and a pharmaceutically acceptable excipient.

15. The polynucleotide sequence of claim 4, wherein said nucleotide sequence is contained on a recombinant expression vector.

16. The polynucleotide sequence of claim 15, wherein said expression vector containing said nucleotide sequence is contained within a host cell.

17. A method for producing a polypeptide comprising the amino acid sequence of SEQ ID NO:101, the method comprising the steps of: a) culturing the host cell of claim 16, under conditions suitable for the expression of the polypeptide; and b) recovering the polypeptide from the host cell culture.

18. A purified antibody which binds specifically to a polypeptide comprising at least a portion of the amino acid sequence of SEQ ID NO:101.

19. A pharmaceutical composition comprising the antibody of claim 18 and a pharmaceutically acceptable excipient.

20. A method for detecting the expression of human telomerase in a biological sample comprising the steps of: a) providing: i) a biological sample suspected of expressing human telomerase protein; and ii) the antibody of claim 18; b) combining said biological sample and said antibody under conditions such that an antibody:protein complex is formed; and c) detecting said complex wherein the presence of said complex correlates with the expression of said protein in said biological sample.

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L1: Entry 1 of 1 File: PGPB May 29, 2003

PGPUB-DOCUMENT-NUMBER: 20030100093
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030100093 A1

TITLE: Human telomerase catalytic subunit: diagnostic and therapeutic methods

PUBLICATION-DATE: May 29, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
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Nakamura, Toru	Boulder	CA	US	
Chapman, Karen B.	Sausalito	CA	US	
Morin, Gregg B.	Davis	CA	US	
Harley, Calvin B.	Palo Alto	CA	US	
Andrews, William H.	Richmond		US	

US-CL-CURRENT: 435/199; 435/320.1, 435/325, 435/368, 435/69.1, 536/23.2

CLAIMS:

What is claimed is:

1. A mammalian cell comprising a recombinant polynucleotide containing a nucleic acid sequence that encodes a telomerase reverse transcriptase protein, variant, or fragment having telomerase catalytic activity when complexed with a telomerase RNA, wherein the polynucleotide hybridizes under stringent conditions to a polynucleotide having a sequence complementary to SEQ ID NO: 1, and wherein the expression of the protein, variant, or fragment from the recombinant polynucleotide in the cell increases proliferative capacity of the cell.

2. The cell of claim 1, which is a human cell.

3. The cell of claim 2, which further comprises a selectable marker gene.

4. The cell of claim 2, wherein the recombinant polynucleotide comprises a constitutive promoter.

5. The cell of claim 2, wherein the recombinant polynucleotide comprises an inducible promoter.

6. The cell of claim 2, which is a liver cell.

7. The cell of claim 6, which is a hepatocyte.

8. The cell of claim 2, which is a nerve cell.

9. The cell of claim 8, which is a glial cell, astrocyte, or oligodendrocyte.

10. The cell of claim 8, which is a neuron of the central nervous system.

11. The cell of claim 10, which is a cholinergic or adrenergic cell.

12. The cell of claim 2, which is a retinal pigmented epithelial cell.

13. The cell of claim 2, which is a contractile cell.

14. The cell of claim 13, which is a heart muscle cell or smooth muscle cell.

15. The cell of claim 2, which is a fat cell.

16. The cell of claim 2, which is a fibroblast.

17. The cell of claim 2, which is a vascular endothelial cell.

18. The cell of claim 2, which is a hormone secreting cell.

19. The cell of claim 18, wherein the cell secretes insulin or glucagon.

20. The cell of claim 18, which is a pituitary cell, thyroid hormone secreting cell, or adrenal cell.

21. The cell of claim 2, which is a fat storing cell.

22. The cell of claim 2, which is an epithelial or mucosal cell.

23. The cell of claim 22, which is an oral cavity cell, stomach cell, or intestinal cell.

24. The cell of claim 22, which is a mammary gland, uterus, or prostate cell.

25. The cell of claim 22, which is an air space epithelial cell of the lung.

26. The cell of claim 2, which is a tubular cell of the kidney.

27. The cell of claim 2, which is a blood cell or a cell of the immune system.

28. The cell of claim 27, which is a T or B lymphocyte.

29. The cell of claim 27, which is a mast cell or eosinophil.

30. The cell of claim 27, which is a monocyte or macrophage.

31. The cell of claim 2, which is an osteoblast, osteocyte, or osteoclast.

32. The cell of claim 2, which is a chondrocyte or sinovial cell.

33. The cell of claim 2, which is a stem cell.

34. The cell of claim 33, which is an embryonic stem cell.

35. The cell of claim 33, which is an embryonic germ cell.

36. The cell of claim 33, which is an adult stem cell.

37. The cell of claim 2, wherein the polynucleotide encodes a full-length, naturally occurring human telomerase reverse transcriptase.

38. The cell of claim 2, wherein the polynucleotide encodes a human telomerase reverse transcriptase having the amino acid sequence of SEQ ID NO:2.

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L1: Entry 1 of 1 File: PGPB Feb 13, 2003

PGPUB-DOCUMENT-NUMBER: 20030032075
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030032075 A1

TITLE: Novel telomerase

PUBLICATION-DATE: February 13, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Cech, Thomas R.	Boulder	CO	US	
Lingner, Joachim	Pl. Croix-Blanche 25	CO	CH	
Nakamura, Toru	Boulder	CA	US	
Chapman, Karen B.	Sausalito	CA	US	
Morin, Gregg B.	Davis	CA	US	
Harley, Calvin B.	Palo Alto	CA	US	
Andrews, William H.	Richmond		US	

US-CL-CURRENT: 435/7.92; 424/146.1, 530/388.26

CLAIMS:

What is claimed is:

1. A monoclonal or recombinant antibody or fragment thereof that binds to human telomerase reverse transcriptase (hTRT) protein having the sequence provided in SEQ. ID NO:225.

2. An antibody fragment that binds to hTRT protein having the sequence provided in SEQ. ID NO:225.

3. The antibody fragment of claim 2, which is an Fab fragment or an F(ab').sub.2 fragment.

4. The antibody or fragment of claim 1, which is a chimeric antibody.

5. The antibody or fragment of claim 1, which has a single chain.

6. A pharmaceutical composition comprising the antibody or fragment of claim 1 and a pharmaceutically acceptable carrier.

7. The antibody or fragment of claim 1, having a reporter molecule or label that is covalently or noncovalently bound.

8. The antibody or fragment of claim 7, wherein the reporter molecule or label is selected from the group consisting of an enzyme, a fluorescent agent, a chemiluminescent agent, a chromatogenic agent, and a magnetic particle.

9. A method of identifying a polypeptide in a biological sample, comprising: a) combining the biological sample with a monoclonal or recombinant antibody or

fragment thereof that can bind hTRT protein having the sequence provided in SEQ. ID NO:225, under conditions where the antibody or fragment will form a complex with hTRT protein; b) detecting complex formed as a result of a); and c) identifying the sample as containing at least a portion of hTRT protein if an antibody:protein complex is detected.

10. The method of claim 9, which is an enzyme-linked immunosorbant assay method.

11. The method of claim 9, which is a radioimmunoassay method.

12. The method of claim 9, wherein the detecting comprises fluorescent activated cell sorting.

13. A method of detecting an hTRT polypeptide in a biological sample, comprising: a) combining the biological sample with a monoclonal or recombinant antibody or fragment thereof according to claim 1, under conditions where an antibody will form a complex with hTRT protein; and b) detecting any complex formed between the antibody or fragment and hTRT protein.

14. The method of claim 13, which is an enzyme-linked immunosorbant assay method.

15. The method of claim 13, which is a radioimmunoassay method.

16. The method of claim 13, wherein the detecting comprises fluorescent activated cell sorting.

17. A method of generating an antibody that specifically binds hTRT protein, comprising immunizing a host with a composition comprising a protein or peptide that contains an amino acid sequence selected from any 5-1100 contiguous amino acids in SEQ. ID NO:225.

18. The method of claim 17, wherein the selected amino acid sequence comprises at least 10 contiguous amino acids in SEQ. ID NO:225.

19. The method of claim 17, wherein the protein or peptide comprises an amino acid sequence selected from the group consisting of SEQ. ID NO:112, SEQ. ID NO:113, SEQ. ID NO:114, SEQ. ID NO:115, SEQ. ID NO:116, and SEQ. ID NO:117.

20. The method of claim 17, wherein the composition further comprises an adjuvant.

21. The method of claim 17, wherein the protein or peptide is a chimera further comprising the sequence of another protein.

22. The method of claim 17, further comprising identifying the antibody in the host that binds to hTRT protein.

Day : Wednesday
Date: 10/15/2003
Time: 08:59:31

PALM INTRANET

Inventor Name Search Result

Your Search was:

Last Name = CECH
First Name = THOMAS

Application#	Patent#	Status	Date Filed	Title	Inventor Name
60068323	~~Not Issued~~ Oct 30, 2001 6,309,867	159	12/19/1997	PEPTIDE BOND FORMATION USING NUCLEIC ACID CATALYSTS	CECH , THOMAS R.
60062908	Not Issued	159	10/21/1997	PEPTIDE BOND FORMATION USING NUCLEIC ACID CATALYSTS	CECH , THOMAS R.
10054611 my - new	Not Issued	030	01/18/2002	NOVEL TELOMERASE	CECH, THOMAS R.
10054295 my new	Not Issued	030	01/18/2002	NOVEL TELOMERASE	CECH, THOMAS R.
10053758 check d.	Not Issued Susan mailed	030	01/18/2002	NOVEL TELOMERASE	CECH, THOMAS R.
10044692 Myers Cech print check	Not Issued	030	01/11/2002	HUMAN TELOMERASE CATALYTIC SUBUNIT: DIAGNOSTIC AND THERAPEUTIC METHODS	CECH, THOMAS R.
10044539	Not Issued	030	01/11/2002	HUMAN TELOMERASE CATALYTIC SUBUNIT: DIAGNOSTIC AND THERAPEUTIC METHODS	CECH, THOMAS R.
09953052	6627619 [redacted]	150	09/14/2001	ANTISENSE COMPOSITIONS FOR DETECTING AND INHIBITING TELOMERASE REVERSE TRANSCRIPTASE	CECH, THOMAS R.
09843676 my new pub	Not Issued	030	04/26/2001	NOVEL TELOMERASE	CECH, THOMAS R.
09816248 Myers Cech pub	Not Issued	041	03/26/2001	PROTECTION-OF-TELOMERE-1 (POT-1) PROTEIN AND ENCODING POLYNUCLEOTIDES	CECH, THOMAS R.
09766253 pub. Myers	Not Issued	092	01/19/2001	NOVEL TELOMERASE	CECH, THOMAS R.
09721506 Australian	Not Issued	041	11/22/2000	HUMAN TELOMERASE CATALYTIC SUBUNIT	CECH, THOMAS R.
09721477	Not Issued	120	11/22/2000	HUMAN TELOMERASE	CECH, THOMAS

SP. below

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				CATALYTIC SUBUNIT	R.
09721456	6617110	150	11/24/2000	CELLS IMMORTALIZED WITH TELMERASE REVERSE TRANSCRIPTASE FOR USE IN DRUG SCREENING	CECH, THOMAS R.
09686341	Not Issued	094	10/10/2000	RNA RIBOZYME POLYMERASES, DEPHOSPHORYLASES, RESTRICTION ENDORIBONUCLEASES AND METHODS	CECH, THOMAS R.
09658512	Not Issued	160	09/08/2000	NOVEL TELOMERASE	CECH, THOMAS R.
09449428	Not Issued	161	11/23/1999	NOVEL TELOMERASE	CECH, THOMAS R.
09438486	Not Issued	061	11/12/1999	NOVEL TELOMERASE	CECH , THOMAS R.
09432503	Not Issued	061	11/02/1999	HUMAN TELOMERASE CATALYTIC SUBUNIT	CECH , THOMAS R.
09175823	Not Issued	161	10/20/1998	PEPTIDE BOND FORMATION USING NUCLEIC ACID CATALYSTS	CECH , THOMAS R.
09052919	6444650	150	03/31/1998	ANTISENSE COMPOSITIONS FOR DETECTING AND INHIBITING TELOMERASE REVERSE TRANSCRIPTASE	CECH , THOMAS R.
09005325	6180399	150	01/09/1998	RNA RIBOZYME POLYMERASES, DEPHOSPHORYLASES, RESTRICTION ENDORIBONUCLEASES AND METHODS	CECH , THOMAS R
08995292	Not Issued	169	12/19/1997	PEPTIDE BOARD FORMATION USING NUCLEIC ACID CATALYSTS	CECH , THOMAS R.
08974584	Not Issued	041	11/19/1997	TELOMERASE REVERSE TRANSCRIPTASE	CECH , THOMAS R.
08974549	6166178	150	11/19/1997	TELOMERASE CATALYTIC SUBUNIT	CECH , THOMAS R.
08915503	Not Issued	168	08/14/1997	NOVEL TELOMERASE	CECH , THOMAS
08912951	6475789	150	08/14/1997	HUMAN TELOMERASE CATALYTIC SUBUNIT: DIAGNOSTIC AND THERAPEUTIC METHODS	CECH, THOMAS R.
08911312	Not Issued	161	08/14/1997	TELOMERASE REVERSE TRANSCRIPTASE	CECH , THOMAS R.
08854050	6261836	150	05/09/1997	NOVEL TELOMERASE	CECH , THOMAS

					R.
08851843	6093809	150	05/06/1997	TELOMERASE	CECH , THOMAS R.
08846017	Not Issued	161	04/25/1997	NOVEL TELOMERASE	CECH , THOMAS R.
08844419	Not Issued	161	04/18/1997	NOVEL TELOMERASE	CECH , THOMAS R.
08786753	5869254	150	01/24/1997	ALTERATION OF SEQUENCE OF A TARGET MOLECULAR BY RIBOZYME CATALYZED TRANS-SPLICING	CECH , THOMAS R.
08724643	Not Issued	161	10/01/1996	NOVEL TELOMERASE	CECH , THOMAS R.
08671824	6025167	150	06/05/1996	RNA RIBOZYME POLYMERASES, DEPHOSPHORYLASES, RESTRICTION ENDORIBONUCLEASES AND METHODS	CECH , THOMAS R.
08434645	Not Issued	168	05/02/1995	ALTERATION OF SEQUENCE OF A TARGET MOLECULE	CECH , THOMAS R.
08433944	Not Issued	168	05/02/1995	ALTERATION OF SEQUENCE OF A TARGET MOLECULE	CECH , THOMAS R.
08433260	Not Issued	161	05/02/1995	ALTERATION OF SEQUENCE OF A TARGET MOLECULE	CECH , THOMAS R.
08324362	5854038	150	10/14/1994	LOCALIZATION OFA THERAPEUTIC AGENT IN A CELL IN VITRO	CECH , THOMAS R.
08278624	5591610	150	07/21/1994	RNA RIBOZYME POLYMERASES, DEPHOSPHORYLASES, RESTRICTION ENDORIBONUCLEASES AND METHODS	CECH , THOMAS R.
08152450	5667969	150	11/12/1993	ALTERATION OF SEQUENCE OF A DELETERIOUS TARGET MOLECULE BY RIBOZYME CATALYZED TRANS-SPLICING	CECH , THOMAS R.
08007745	Not Issued	166	01/22/1993	LOCALIZATION OF THERAPEUTIC AGENTS	CECH , THOMAS R.
07941561	Not Issued	163	09/08/1992	SITE SPECIFIC CLEAVAGE OF SINGLE-STRANDED DNA	CECH , THOMAS R.
07843737	5354855	150	02/28/1992	RNA RIBOZYME WHICH CLEAVES SUBSTRATE RNA WITHOUT FORMATION OF A COVALENT BOND	CECH , THOMAS R.

07842805	Not Issued	163	02/28/1992	RIBOZYME INHIBITORS	CECH , THOMAS R.
07562672	5093246	150	08/03/1990	RNA RIBOZYME POLYMERASES, DEPHOSPHORYLASES, RESTRICTION ENDORIBO-NUCLEASES AND METHODS	CECH , THOMAS R.
07496852	5180818	150	03/21/1990	SITE SPECIFIC CLEAVAGE OF SINGLE-STRANDED DNA	CECH , THOMAS R.
07427707	Not Issued	166	10/26/1989	RIBOZYME INHIBITORS	CECH , THOMAS R.
07328503	5116742	150	03/24/1989	RNA RIBOZYME RESTRICTION ENDORIBONUCLEASES AND METHODS	CECH , THOMAS R.
07324385	5037746	150	03/16/1989	RNA RIBOZYME POLYMERASES, AND METHODS	CECH , THOMAS R.
06937327	4987071	150	12/03/1986	RNA RIBOZYME POLYMERASES, DEPHOSPHORYLASES, RESTRICTION ENDORIBONUCLEASES AND METHODS	CECH , THOMAS R.

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Last Name Cech **First Name** Thomas

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